7058

# 7058
## HIGH-MU TWIN TRIODE

9-PIN MINIATURE TYPE

*For use in mobile communications equipment operating from 6-cell storage-battery systems. Useful in phase-inverter, resistance-coupled-amplifier, and low-frequency-oscillator applications.*

### GENERAL DATA

**Electrical:**

Heater, for Unipotential Cathodes:
- Voltage range . . . . . 12 to 15 . . . . . ac or dc volts
- Current (Approx.) at 13.5 volts . . . . . 0.155 . . . . . . . . . . . amp

Direct Interelectrode Capacitances:°

| | Unit No.1 | Unit No.2 | |
|---|---|---|---|
| Grid to plate | 1.7 | 1.7 | μμf |
| Grid to cathode and heater | 1.6 | 1.6 | μμf |
| Plate to cathode and heater | 0.46 | 0.34 | μμf |

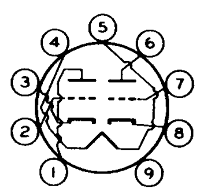
**Characteristics, Class $A_1$ Amplifier (Each Unit):**

| | | |
|---|---|---|
| Heater Voltage | 13.5 | volts |
| Plate Voltage | 250 | volts |
| Grid Voltage | -2 | volts |
| Amplification Factor | 100 | |
| Plate Resistance (Approx.) | 61000 | ohms |
| Transconductance | 1650 | μmhos |
| Plate Current | 1.25 | ma |
| Grid Voltage (Approx.) for plate μa = 10 | -5 | volts |

**Mechanical:**

Operating Position . . . . . . . . . . . . . . . . . . . . . . . . Any
Maximum Overall Length . . . . . . . . . . . . . . . . . . 2-3/16"
Maximum Seated Length . . . . . . . . . . . . . . . . . . . 1-15/16"
Length, Base Seat to Bulb Top (Excluding tip) . . . . . . . . . . . . . . 1-9/16" ± 3/32"
Diameter . . . . . . . . . . . . . . . . . . . . . . 0.750" to 0.875"
Dimensional Outline . . . . . . . . . . . . *See General Section*
Bulb . . . . . . . . . . . . . . . . . . . . . . . . . . T6-1/2
Base . . . . . . . . . Small-Button Noval 9-Pin (JETEC No.E9-1)
Basing Designation for BOTTOM VIEW . . . . . . . . . . . 9EF

Pin 1 - Plate of Unit No.2
Pin 2 - Grid of Unit No.2
Pin 3 - Cathode of Unit No.2
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Plate of Unit No.1




Pin 7 - Grid of Unit No.1
Pin 8 - Cathode of Unit No.1
Pin 9 - Internal Connection— Do Not Use

°: See next page.


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## AMPLIFIER — Class $A_1$

*Values are for Each Unit*

**Maximum Ratings,** *Absolute Values:*

| | | |
|---|---|---|
| PLATE VOLTAGE | 330 max. | volts |
| GRID VOLTAGE: | | |
| Positive-bias value | 0 max. | volts |
| Negative-bias value | 55 max. | volts |
| PLATE DISSIPATION | 1 max. | watt |
| PEAK HEATER-CATHODE VOLTAGE: | | |
| Heater negative with respect to cathode. | 120 max. | volts |
| Heater positive with respect to cathode. | 120 max. | volts |

**Typical Operation as Resistance-Coupled Amplifier (Each Unit):**

*See RESISTANCE-COUPLED AMPLIFIER CHART No. 25 at front of Receiving Tube Section*

**Maximum Circuit Values:**

| | | |
|---|---|---|
| Grid-Circuit Resistance: | | |
| For fixed-bias operation. | 0.5 max. | megohm |
| For cathode-bias operation. | 1 max. | megohm |

° Without external shield.

## CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

*Values are for Each Unit Unless Otherwise Specified*

| | *Note* | *Min.* | *Max.* | |
|---|---|---|---|---|
| Heater Current. | 1 | 0.143 | 0.167 | amp |
| Amplification Factor. | 1,2 | 85 | 115 | |
| Plate Current | 1,2 | 0.9 | 1.75 | ma |
| Transconductance. | 1,2 | 1360 | 2100 | μmhos |
| Reverse Grid Current (Total— both units) | 1,3 | – | -1 | μa |
| Heater-Cathode Leakage Current: | | | | |
| Heater negative with respect to cathode. | 1,4 | – | 20 | μa |
| Heater positive with respect to cathode. | 1,4 | – | 20 | μa |
| Leakage Resistance: | | | | |
| Between grid and all other electrodes of both units tied together | 1,5 | 50 | – | megohms |
| Between plate and all other electrodes of both units tied together | 1,6 | 50 | – | megohms |

Note 1: With ac or dc heater volts = 13.5.

Note 2: With dc plate volts = 250, and dc grid volts = -2. Each unit tested separately. Electrodes of unit not under test are connected to ground.

Note 3: With dc plate volts = 250, grid resistor (megohms) = 1 common to both units, and dc grid volts = -2. Units are tested in parallel.

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Note 4: With 100 volts dc between heater and cathode.

Note 5: With grid 100 volts negative with respect to all other electrodes of both units tied together.

Note 6: With plate 300 volts negative with respect to all other electrodes of both units tied together.

## SPECIAL RATINGS & PERFORMANCE DATA

### Heater-Cycling Life Performance:

This test is performed on a sample lot of tubes from each production run. A minimum of 2000 cycles of intermittent operation is applied under the following conditions: heater volts = 17 cycled one minute on and four minutes off, heater 135 volts negative with respect to cathode, and all other elements connected to ground. At the end of this test, tubes are checked for heater-cathode shorts and open circuits.

### Low-Frequency Vibration Performance:

This test is performed on a sample lot of tubes from each production run under the following conditions: units connected in parallel, heater volts = 13.5, plate-supply volts = 250, grid volts = -2, plate load resistor (ohms) = 2000, and vibrational acceleration of 2.5 g at 25 cps. In this test, the rms output voltage must not exceed 150 millivolts.

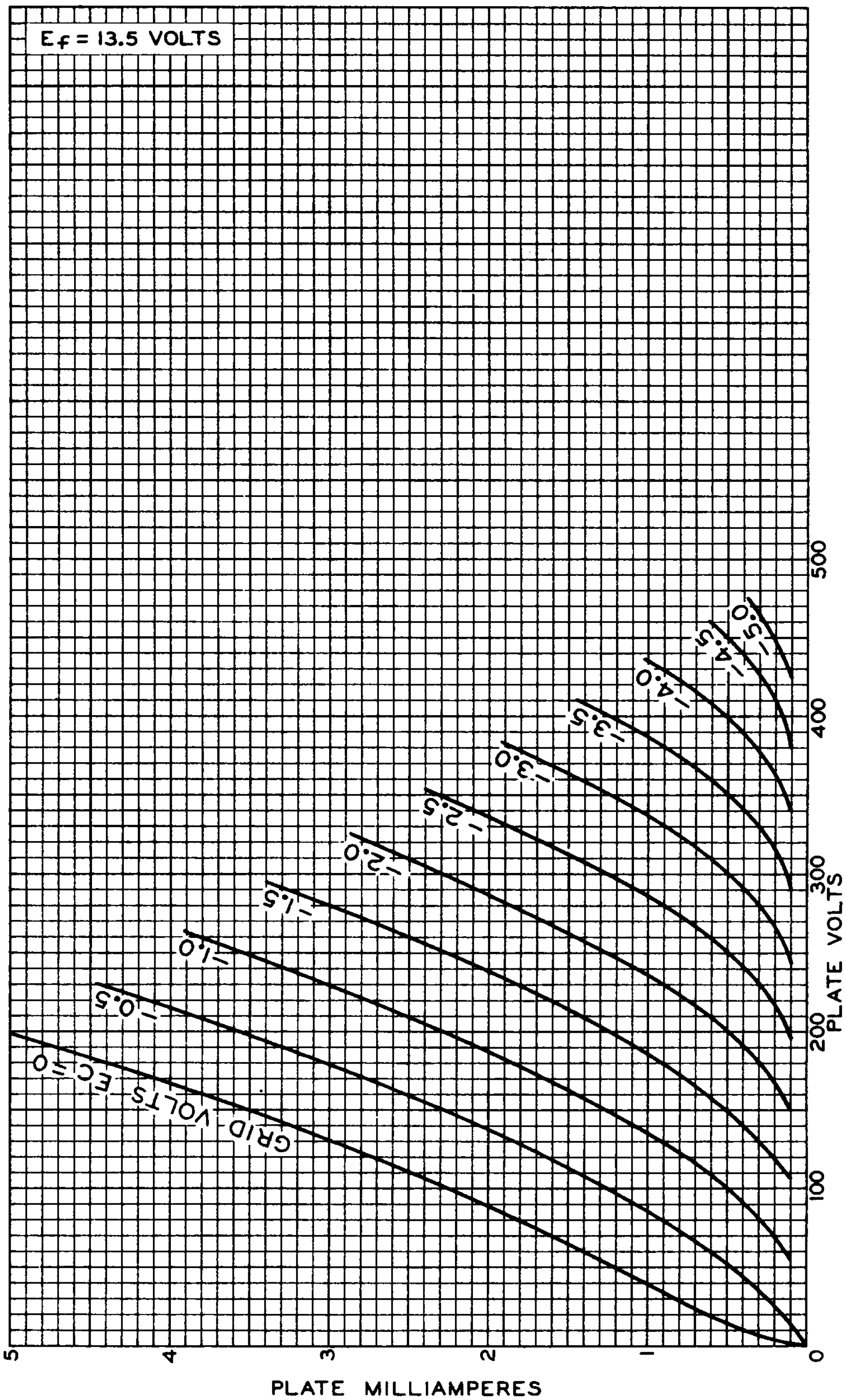
### 500-Hour Intermittent Life Performance:

This test is performed on a sample lot of tubes from each production run to insure high quality of the individual tube and to guard against epidemic failures. Life testing is conducted under the following conditions: heater volts = 15 and maximum-rated plate dissipation.

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## AVERAGE PLATE CHARACTERISTICS
### EACH UNIT



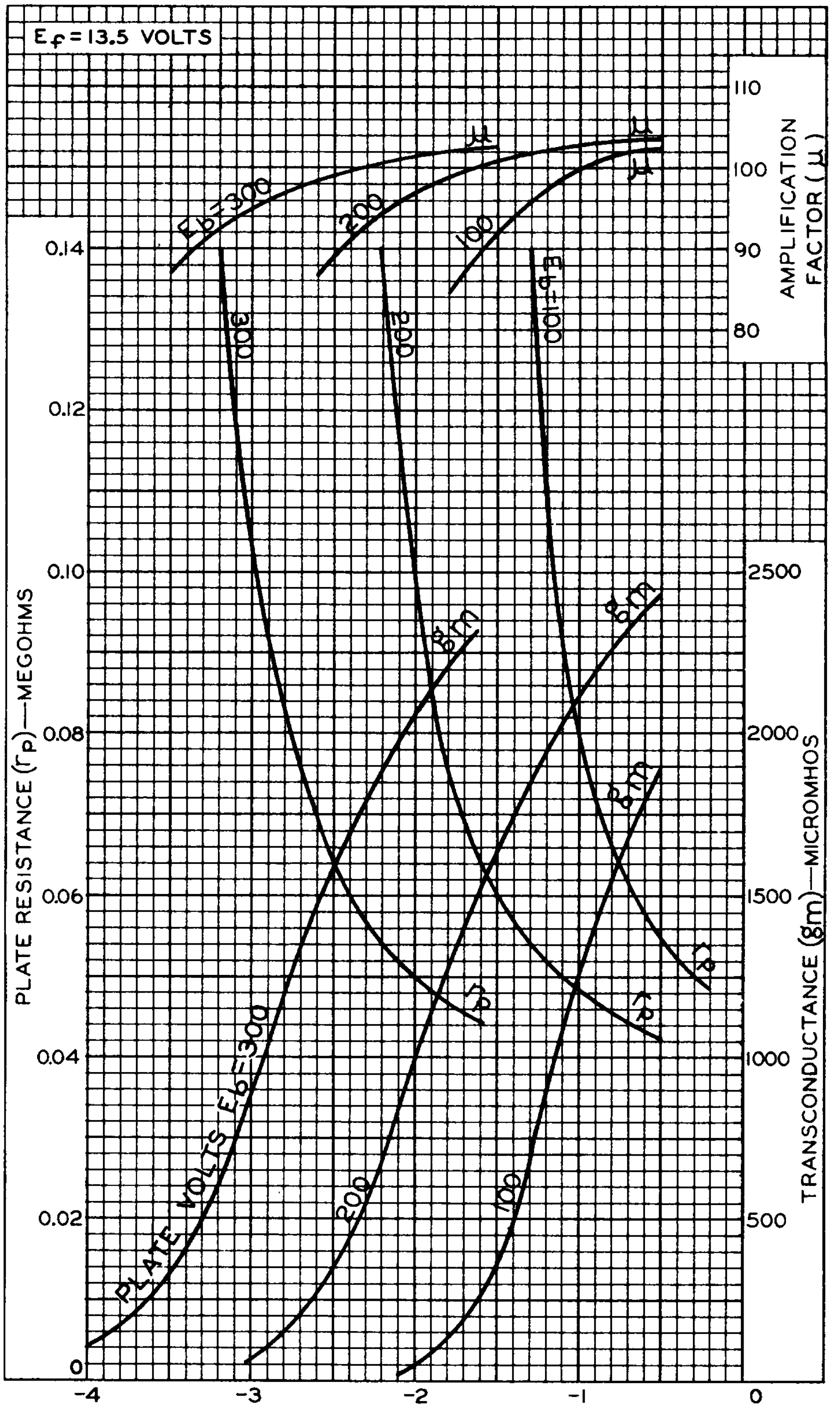

ELECTRON TUBE DIVISION 92CM-9793

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## AVERAGE CHARACTERISTICS
EACH UNIT




ELECTRON TUBE DIVISION 92CM-9805

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